CLAIMS

What is claimed is:

1.   A method for assigning Internet Protocol addresses in a computer network, said method comprising:

connecting in the computer network a master computer to a slave computer;

assigning by said master computer a physical address to said slave computers; and

assigning by said master computer a unique Internet Protocol (IP) address to said slave computer such that said master computer manages the IP address assignment of said slave computer.

2.   The method of claim 1, wherein said master computer initiates all communications between said master computer and said slave computer.

3.   The method of claim 1, further comprising connecting said master computer and said slave computer in an Ethernet string topology.

4.   The method of claim 1, further comprising connecting said master computer and said slave computer in an Ethernet ring topology.

5.   The method of claim 1, further comprising transmitting a signal between said master computer and said slave computer by selectively directing said signal to either a transmission control protocol (TCP) socket or a user datagram protocol (UDP) port on said master computer and said slave computer.

1   6.   The method of claim 1, further comprising:

2   connecting an intermediate slave computer between said master computer and

3   said slave computer, said intermediate slave computer comprising a software application

4   layer hierarchically above an Ethernet software layer; and

5   bypassing said application layer in said intermediate slave computer when

6   sending a signal to a subsequent slave computer by enabling a forwarding command in

7   said Ethernet software layer when said signal is not addressed to said intermediate slave

8   computer.

7.   The method of claim 1, further comprising storing said IP address in an Address

Resolution Protocol (ARP) table in said master computer.

8. A network having a master computer and at least one slave computer, said network comprising:

means for connecting the master computer and the at least one slave computer;

means for assigning by the master computer a physical address to each of said at least one slave computer; and

means for assigning by the master computer a unique Internet Protocol (IP) address to each of said at least one slave computers.

9. The network of claim 8, wherein the master computer initiates all communications between the master computer and said at least one slave computer.

10. The network of claim 8, further comprising means for connecting the master computer and the at least one slave computer in an Ethernet string topology.

11. The network of claim 8, further comprising means for connecting the master computer and the at least one slave computer in an Ethernet ring topology.

12. The network of claim 8, further comprising means for transmitting a signal between the master computer and the at least one slave computer by selectively directing said signal to either a transmission control protocol (TCP) socket or a user datagram protocol (UDP) port on the master computer and the at least one slave computer.

1   13.   The network of claim 8, further comprising:

2   means for connecting an intermediate slave computer between the master

3   computer and the at least one slave computer, said intermediate slave computer

4   comprising a software application layer hierarchically above an Ethernet software layer;

5   and

6   bypassing said application layer in said intermediate slave computer when

7   sending a signal to a subsequent slave computer by enabling a forwarding command in

8   said Ethernet software layer when said signal is not addressed to said intermediate slave

9   computer.

14.   The network of claim 8, further comprising means for storing said unique IP
address in an Address Resolution Protocol (ARP) table in the master computer.

15.   A computer usable medium comprising:

computer program code within said computer usable medium, said computer program code being capable of being used to assign Internet Protocol addresses in a computer network, said computer program code including:

instructions for connecting in the network a master computer to at least one slave computer;

instructions for assigning by said master computer a physical address to each of said at least one slave computers; and

instructions for assigning by said master computer a unique Internet Protocol (IP) address to each of said at least one slave computers.

16.   The computer usable medium of claim 15, further comprising computer program code for said master computer to initiate all communications between said master computer and said at least one slave computer.

17.   The computer usable medium of claim 15, further comprising computer program code enabling said master computer and said at least one slave computer to communicate in an Ethernet ring topology.

18.   The computer usable medium of claim 15, further comprising computer program code for transmitting a signal between said master computer and said at least one slave computer by selectively directing said signal to either a transmission control protocol (TCP) socket or a user datagram protocol (UDP) port on said master computer and said at least one slave computer.

19.   The computer usable medium of claim 15, further comprising:

computer program code for connecting an intermediate slave computer between said master computer and said at least one slave computer, said intermediate slave computer comprising a software application layer hierarchically above an Ethernet software layer; and

computer program code for bypassing said application layer in said intermediate slave computer when sending a signal to a subsequent slave computer by enabling a forwarding command in said Ethernet software layer when said signal is not addressed to said intermediate slave computer.

20.   The computer usable medium of claim 15, further comprising computer program code for storing said IP address in an Address Resolution Protocol (ARP) table in said master computer.